Microalgae biomass incorporation in salted cookies ("crackers") increases their functional properties

Conference Paper · December 2017

CITATIONS
0

READS
16

8 authors, including:

Natascia Biondi
University of Florence
42 PUBLICATIONS **2,348** CITATIONS
SEE PROFILE

Mario Tredici
University of Florence
121 PUBLICATIONS **4,845** CITATIONS
SEE PROFILE

Isabel Sousa
University of Lisbon / Instituto Superior de Ag…
90 PUBLICATIONS **1,322** CITATIONS
SEE PROFILE

Anabela Raymundo
Instituto Piaget
61 PUBLICATIONS **1,266** CITATIONS
SEE PROFILE

ALGAEUROPE

05-07 DEC 2017 | BERLIN | GERMANY

BOOK OF ABSTRACTS

DLG Benelux

EABA EUROPEAN ALGAE BIOMASS ASSOCIATION

European Commission

Microalgae biomass incorporation in salted cookies ("crackers") increases their functional properties

Ana Paula Batista[1], Alberto Niccolai[2], Ivana Bursic[1], Liliana Rodolfi[2,3], Natascia Biondi[2], Mario R. Tredici[2], Isabel Sousa[1], Anabela Raymundo[1]

[1]LEAF – Linking Landscape, Environment, Agriculture and Food, Instituto Superior de Agronomia, Universidade de Lisboa, Portugal; [2]Department of Agrifood Production and Environmental Sciences (DISPAA), University of Florence, Italy; [3]Fotosintetica & Microbiologica S.r.l., Florence, Italy

Abstract:

In a previous work [1], microalgae sweet cookies were developed, but microalgae savoury foods might be more easily accepted due to their characteristic marine flavour. This study evaluated salted cookies ("crackers") with 2% and 6% (w/w) of *Arthrospira platensis* F&M-C256, *Chlorella vulgaris* Allma, *Tetraselmis suecica* F&M-M33 and *Phaeodactylum tricornutum* F&M-M40 biomass, in terms of physicochemical properties, *in vitro* digestibility (IVD) and radical scavenging activity (RSA).

Microalgae crackers showed significantly higher ($p<0.05$) protein content than the control (9.8% dw), with the highest values (>14% dw) for 6% *A. platensis* and *C. vulgaris.* The highest total dietary fiber (6.7% dw) was found for 6% *A. platensis* cracker while the control had 5.0% (dw). The addition of algae did not significantly increase the salt content in relation to the control (1.9% dw), except for 6% *T. suecica* (2.6% dw).

Microalgae crackers showed high IVD, with values ranging from 81.9% to 85.8%, with the highest value for *A. platensis*. These values are within the IVD range of commercial salted crackers.

The highest RSAs (24.4-24.6%, which corresponds to 0.25 mg/g_{alga} of vitamin C equivalent antioxidant capacity) were found for *A. platensis* and *P. tricornutum* both at 6% incorporation. Total phenolics in microalgae crackers ranged from 1.1 to 2.4 mg of gallic acid equivalent per g of algal biomass, with the highest value for *T. suecica* 6%.

[1] Batista A.P. et al (2017) Algal Research, 26:161-171

Acknowledgments: Fundação para a Ciência e a Tecnologia (UID/AGR/04129/2013), COST Action ES1408.